

**REMARKS****Claim Amendment**

New Claims 32 and 33 have been added. New Claim 32 is identical to old Claim 16 except that it requires that at least 10 mol% of all carboxyl groups in the polyvinyl acetal are esterified (see very end of the claim). New Claim 33 requires that at least 20 mol% of all carboxyl groups in the polyvinyl acetal are esterified. Support for these amendments are found at page 10 second full paragraph.

**Interview Summary**

On April 25, 2007, a telephonic interview was held between Steven G. Davis, Attorney for Applicants, and Examiners Michael Bernshteyn and David Wu. The Examiners are thanked for the interview and for their helpful comments during the interview.

During the interview, the novelty rejection in view of U.S. Patent No. 6,808,858 (the "858 Patent") was discussed. Mr. Davis asserted that the polyvinyl acetal polymer described in the '858 Patent is not crosslinked. He referred the Examiners to the description of the preparation of the polyvinyl polymers beginning at column 5, line 5, including an acetalization reaction at column 5, line 10 which is undertaken at "temperatures from 0 to 90° C" and noted that the temperatures were not high enough to cause crosslinking between the alcohol and ester groups of the polymer. In support of this position, he noted column 5, lines 28-42 of U.S. Patent No. 3,577,374, which describes conditions for esterifying a polyvinyl acetal polymer. Temperatures of 160-225° C are described, which are far in excess of the 0 to 90° C range recited in the '858 Patent. U.S. Patent No. 3,577,374 was cited in section 8 of the Office Action mailed on January 22, 2007.

The Examiners inquired whether a small percentage of the polyvinyl acetal polymer disclosed by the '858 Patent was crosslinked. To allay this concern, Mr. Davis offered to file a Declaration by Robert W. Fuss, Ph.D., which states that crosslinking of the polyvinyl acetal polymer disclosed in the '858 Patent does not occur. Dr. Fuss is an inventor of the subject matter claimed in the '858 Patent.

It was agreed that a Declaration by Dr. Fuss which addresses the issues raised in the Final Office Action would overcome the rejections of record. Accordingly, a Declaration by Dr. Fuss which addresses these issues is enclosed herewith.

Rejection of Claims 16, 20 and 21 Under 35. U.S.C. §102 (b) over U.S. Pat. 6,808,858

In response to the novelty rejection of Claims 16, 20 and 21 over the '858 Patent, the Declaration under 37 C.F.R. 1.132 of Robert W. Fuss, Ph.D.(hereinafter the "Fuss Declaration") is enclosed herewith. Dr. Fuss is an inventor of the subject matter claimed in the '858 Patent.

***The Technology Described in the '858 Patent***

Sections 5 and 6 of the Fuss Declaration describe the technology disclosed in the '858 Patent. Specifically, the '858 Patent is directed to a photosensitive composition for lithographic printing plates, which contains: 1) a binder; and 2) a photosensitive material. The binder is the polyvinyl acetal polymer; and the photosensitive material is a diazonium polycondensate and/or a monomer(s) capable of free radical polymerization, both of which polymerize when exposed to light under appropriate conditions.

Lithographic printing technique involves applying a photosensitive composition to a printing plate, creating the desired printing patterns by exposing segments of the printing plate to light, developing the exposed parts, removing the non-exposed and non-developed parts with water, covering the remaining parts of the surface of the printing plate with ink and finally printing. The non-exposed and non-developed parts of the printing plate include the binder. So that the binder can be washed away, ***it is crucial that the binder is water soluble*** (see Section 7 of the Declaration).

***The Polyvinyl Acetal Polymers Disclosed by '858 Patent Are Not Crosslinked***

Section 8 of the Fuss Declaration states that the hydroxyl and carboxyl groups in the polyvinyl acetal polymer disclosed in the '858 Patent do ***not*** react to form crosslinks under the conditions described in the '858 Patent. The Fuss Declaration specifically addresses the description beginning at column 5, line 10, which describes a reaction carried out at

“temperatures from 0 to 90° C”. In Section 8, Dr. Fuss states that esterification of a carboxyl group with an alcohol requires temperatures far greater than 90° C, (typically greater than 150° C) . As such, the polymer is not crosslinked by exposure to temperatures between 0 to 90° C .

Section 8 of the Fuss Declaration also states that no where does the ‘858 Patent describe conditions which would cause the polyvinyl acetal polymer to crosslink. Section 8 also specifically states that the polyvinyl acetal polymer in the ‘858 Patent does not react when the photosensitive composition disclosed therein is exposed to light.

Section 10 of the Fuss Declaration addresses the statement at column 4, line 29-31 in the ‘858 Patent. This passage is referred to in Section 1 of the Office action to support the assertion that the polyvinyl acetal polymers in the ‘858 Patent are crosslinked. This passage is reproduced below:

It is thus possible to obtain tailor-made polymers which are suitable for use in photosensitive compositions based on different photocrosslinking mechanisms.

Section 10 of the Fuss Declaration states that a person skilled in the art of lithography would immediately understand this passage to refer to *photocrosslinking* i.e. to the reaction of light and the photosensitive materials described in section (i) beginning at column 3, line 14. A person skilled in the art of lithography would immediately know that this passage does *not* refer to the binder, i.e., the polyvinyl acetal polymer, described in section (ii) beginning at column 3, line 25. The polyvinyl acetal polymer in the ‘858 Patent does not contain double bonds and therefore *cannot be* photocrosslinked under the conditions disclosed in this patent.

For reasons discussed in the preceding paragraph, it is apparent that the polyvinyl polymer disclosed in the ‘858 Patent is not crosslinked. As such, withdrawal of the rejection under 35 U.S.C. 102 is requested.

As noted above, the invention disclosed in the ‘858 Patent is directed to a photosensitive composition used for lithographic printing plates. Section 9 of the Fuss Declaration states that a person skilled in the art of lithography knows that the polyvinyl acetal polymer described in the ‘858 Patent must not only be water soluble to function properly, but that the solubility must also be in a defined range. Section 9 states further and that crosslinking i) would consume the

carboxyl groups in the polyvinyl acetal polymer, thereby reducing its solubility in water; and ii) would result in a mixture of crosslinked and uncrosslinked polymers which would **not** have the required defined solubility. As such, Section 9 concludes that a person skilled in the art of lithography knows that a crosslinked polyvinyl polymer is not suitable for use in lithographic printing.

As such, the claimed **crosslinked** polyvinyl acetal is non-obvious over the linear polyvinyl acetal polymer described in the '858 Patent because one of ordinary skill in the art knows that crosslinking the polymer renders it unsuitable for use in lithographic printing.

#### Rejection of Claims 17-19 and 22-31 Under 35 U.S.C. §103(a)

Claims 17-19 and 22-31 were rejected as being obvious over the '858 Patent alone (Claims 17-19 and 24-25) or in combination with U.S. Patent Nos 2,332,889 or 3,577,374. These prior art references were cited to as allegedly rendering obvious the additional limitations in certain dependent claims. However, U.S. Patent Nos 2,332,889 or 3,577,374 do not provide a reason (motivation) to modify the polyvinyl acetal polymer in the '858 Patent to crosslink them by intermolecular esterification, as claimed by the Applicants. As noted above, the '858 Patent is directed towards a photosensitive composition for use in lithographic printing. One skilled in the art of lithography knows that crosslinking the polyvinyl acetal polymer used therein would be detrimental to the performance of the photosensitive composition and therefore would not use crosslinked polyvinyl acetal polymers. As such, the subject matter of Claims 17-19 and 22-31 is non-obvious in view of the combined teachings of these references.

Reconsideration and withdrawal of the rejections under 35 U.S.C. 103 is respectfully requested.

#### New Claims 32 and 33

During the telephonic interview held on April 25, 2007, the Examiners inquired whether tiny amounts of crosslinked polyvinyl acetal polymer could be present in the composition disclosed in the '858 Patent. It is believed that the Fuss Declaration adequately addresses this issue. In the event that the Examiner is unconvinced, his attention is respectfully directed to new Claims 32 and 33, which specify that less than 10% and less than 20%, respectively of the

carboxyl groups in the claimed polymer are esterified. It is respectfully submitted that these new limitations clearly distinguish the claimed polymer over the teachings of the '858 Patent.

**CONCLUSION**

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

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